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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,529	09/23/2003	Karl Brown	6121D01/MD/PVD/PJS	1882

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04/02/2004

Patent Counsel
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EXAMINER

HASSANZADEH, PARVIZ

ART UNIT

PAPER NUMBER

1763

DATE MAILED: 04/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/668,529

Applicant(s)

BROWN ET AL.

Examiner

Parviz Hassanzadeh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-11 is/are allowed.
- 6) ☒ Claim(s) 1-8, 12-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/11/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: on page 5, line 21, it is suggested to delete "arraigned" and substitute therefor "arranged".

Appropriate correction is required.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because in Fig. 2, reference character "292" has been used to designate both labyrinth gap and strap; it is suggested to change the strap from 292 to 242 in accord with specification on page 6, line 6. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-8 and 12-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1, it is not clear whether the first surface or the second surface of the central portion is configured to support the substrate, thus it is not clear whether the lip is projection upward or downward.

Claim 12 recites the limitation "the substrate support member" in the last line of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 12, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takana (US Patent No. 6,296,747 B1) in view of Hong et al (US Patent No. 5,897,752).

Takana teaches a processing apparatus (Fig. 1) comprising:

a pedestal (substrate support member) 22;

a conductive, annular upper shield 26 having a cylindrical outer portion³⁰ and an inner (terminating in an end) portion 33 having a first diameter; and

lower cover (shield) ring cover 20 (*a lower shield*) having a center portion having (a first surface) lower surface and a second surface (upper surface) opposite the first surface, and a lip projecting from the first (lower) surface of the ring having a diameter greater than a diameter of

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the end of the cylindrical portion of the shield, the lip configured to maintain a spaced apart relation from the substrate support member (column 1, lines 21-64).

Takana et al fail to teach the cover shield 20 being electrically conductive.

Hong et al teach a plasma reactor including an upper shield 20 and lower ring 42 wherein the lower ring 42 is an electrically conductive in order to apply bias potential thereto and thus increase the plasma potential (column 5, lines 5-34).

Regarding claim 15: as shown in Fig. 2 of Hong et al, the lower ring 42 is connected to a power source 44 via an electrical wire (an RF return strap electrically coupled to the shield). Use of threaded hole and bolt among other conventional means for coupling of the electrical wire to the ring 42 is considered as an art recognized equivalent that would have been obvious to one of ordinary skill in the art at the time of the invention.

Claim 16, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takana (US Patent No. 6,296,747 B1) in view of Hong et al (US Patent No. 5,897,752) as applied to claim 12, and further in view of Al-Sharif et al (US Patent No. 6,077,353).

Takana in view of Hong et al teach all limitations of the claims as discussed above except for mounting ring and mounting surface; and the shield comprising or coated with aluminum.

Regarding claim 16: Al-Sharif et al teach a plasma cleaning apparatus (Fig. 2) including a substrate support member 42 comprising a pedestal plate 44 disposed within a recess 46 formed on a top surface of a quartz insulator plate 48. Preferably the pedestal plate 44 comprises titanium and is connected to a power supply to provide a bias to the substrate 54 mounted on the surface of the pedestal (column 3, lines 49-65).

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Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the substrate support member as taught by Al-Sharif et al in the apparatus of Takana in view of Hong et al as an art recognized equivalent of supporting and applying a bias potential on a substrate to be processed. See MPEP 2144.06, Art Recognized Equivalent for the Same Purpose, Substituting Equivalents Known for the Same Purpose (*in re Fout*, 675 F.2d 297, 213 USPQ 532 (CCPA 1982)).

Regarding claim 17: It is the Examiner's position that coating the surface of a shield member with aluminum to prevent plasma corrosion is old in the art and would have been obvious to one of ordinary skill in the art at the time of the invention to protect the surface of the shield from plasma corrosion.

Allowable Subject Matter

Claims 1-8, 13 and 14 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claims 9-11 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Parviz Hassanzadeh whose telephone number is (571)272-1435. The examiner can normally be reached on Tuesday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (571)272-1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

P. Hassanzadeh
Parviz Hassanzadeh
Primary Examiner
Art Unit 1763

March 25, 2004